

19. NOTES ON THE BIOLOGY OF *MELANOCHELYS* (REPTILIA, TESTUDINES, EMYDIDAE) IN THE TERAI OF NEPAL

Two species of *Melanochelys* occur on the Indian subcontinent, but their presence in Nepal has remained unconfirmed. The black turtle, *M. trijuga*, is common and widespread, with scattered populations in the southern half of India and others centred in the Bengal area. The keeled hill turtle, *M. tricarinata*, is much less common and confined to the Bengal-Assam area (Smith 1931, Das 1985). Recent investigations into the ecology of rhinoceros and their forage species in the Terai of central Nepal (Royal Chitwan National Park, RCNP, vicinity of Sauraha) have revealed the presence of *Melanochelys* in Nepal and several aspects of its biology.

OCCURRENCES AND ABUNDANCE

Recently, Moll and Vijaya (1986) reported the occurrence of both *Melanochelys tricarinata* and *M. trijuga* from the northwestern corner of the state of Bihar, India, adjacent to the Chitwan area of Nepal. This close proximity suggested that both species probably also occur in RCNP, and Moll and Vijaya saw photographs of a *M. tricarinata* supposedly taken in RCNP. We can confirm that *Melanochelys* does occur in RCNP, although those observations with confirmed species identification are all *M. trijuga*. All sightings of *Melanochelys* have been in grassland habitats at the edge of rhino wallows, in short Shiru (*Imperata cylindrica*) grassland and in floodplain grassland (authors' observations; J. Lehmkuhl and R. Shrestha, pers. comm.). In some instances, the sighted turtle was within 30 m or less of the forest edge, yet none have been observed in the forest. This habitat preference seems real, because examination of the forest floor is easier than viewing the soil surface in

the grasslands. A *M. trijuga* (shell) was obtained in the Terai zone of western Nepal (Royal Bardia Wildlife Reserve, vicinity of Thakurdara) as well.

Melanochelys has been observed most frequently in October-November and once in February. These data show that they are active during the first half of the dry season. Activity may be reduced during the last half of the dry season, because the grasslands are heavily burned and no turtles are visible after the fires nor have any turtles been seen with fire-scarred shells. All turtles observed have been adults or large juveniles.

Melanochelys trijuga seems to be relatively common in RCNP and vicinity, although we can provide no estimate of relative abundance or as yet confirm the presence of *M. tricarinata*. Our observations have been made secondarily to other field investigations and no intense search has been made. Dinerstein has begun to individually mark these turtles, so estimates of abundance will be possible in the future. Shells of *Melanochelys* and *Indotestudo elongata* are found in refuse dumps, seemingly common enough to serve as an occasional food item for the local human population.

REPRODUCTION

Incubating eggs of *Melanochelys* have been found twice, each time buried in grassland latrines of the greater one-horned rhinoceros (*Rhinoceros unicornis*). The first clutch was discovered in March, 1985 and consisted of three oblong eggs (46.8 × 27.5 mm, 49.1 × 26.7 mm, 51.3 × 27.6 mm); the shells were thin, firm and calcareous. Two eggs were opened and no embryos were apparent. A second

clutch of six egg was found 15 November 1985. They are equal in size to the first clutch; length — mean 47.4 ± 2.3 mm, range 44.6–50.7 mm; diameter — 27.4 ± 0.6 mm, 26.7–28.3 mm; weight — 21.6 ± 0.6 g., 20.6–22.3 g. None of these eggs contained embryos. This clutch was buried in the latrine at a depth of approximately 30 cm; the latrine was 3 m on its longest axis and sat on a tall-grass clump of Baruwa (*Saccharum benghalensis*). The specific identity of these eggs is uncertain; both species have similar-sized eggs but different clutch numbers, 1-3 eggs in *M. tricarinata* and 3-8 eggs in *M. trijuga* (Das 1985, E. Moll, pers. comm.).

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ADULT SIZE AND GROWTH

The *M. trijuga* shell found in the Bardia area was 114 mm carapace length (CL) and 110 mm plastron length (PL). A 1.2 kg adult female *M. trijuga* from Chitwan was 215 mm CL and 186 mm PL with a maximum carapace width of 150 mm and a maximum height of 83 mm. This female possessed seven distinct scute layers in addition to the hatchling scute on each plastral plate. This datum suggests that she was at least seven years old, and measurements of pectoral scute layers indicate a 43 mm PL at hatching and an average annual growth rate (PL) of 20.4 mm per year.

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20. *KACHUGA* (REPTILIA, EMYDIDAE) IN NATIONAL CHAMBAL SANCTUARY: OBSERVATIONS ON DIURNAL NESTING EMERGENCES AND UNSUCCESSFUL NESTING CRAWLS

(With a text-figure)

Data presented here refer to the period 30 October 1983-5 July 1985 during which we undertook 120 whole-day trips to the field for 'turtle-studies'.